

ABSTRACT OF THE DISCLOSURE

Processes for the living polymerization of olefin monomers with terminal carbon-carbon double bonds are disclosed. The processes employ initiators that include a metal atom and a ligand having two group 15 atoms and a group 16 atom or three group 15 atoms. The ligand is bonded to the metal atom through two anionic or covalent bonds and a dative bond. The initiators are particularly stable under reaction conditions in the absence of olefin monomer. The processes provide polymers having low polydispersities, especially block copolymers having low polydispersities. It is an additional advantage of these processes that, during block copolymer synthesis, a relatively small amount of homopolymer is formed.